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ENTOMOLOGICAL NEWS

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Revision of the Neotropical Acanthocinini (Coleoptera: Cerambycidae) I. The genus Canidia and its allies

By LAWRENCE S. DILLON, Department of Biology, A. & M. College of Texas

This small group of genera, which appears to be a rather natural one, includes those forms with a narrow prosternal process (not more than one-sixth as wide as a procoxal cavity), a subquadrate front, and an erect lower ocular lobe which is subequal to the gena in height. Moreover, the prothorax is subcylindrical and without distinct transverse sulci (except in *Nyssodectes*), and the metatarsi have the first segment no longer than the remaining segments together.

For this study, specimens have been received from the U. S. National Museum [USNM], the American Museum of Natural History [AMNH], Cornell University [CU], and California Academy of Sciences [CAS], and from the personal collections of Mr. Lionel Lacey [LL], and Mr. David G. Kissinger [DGK]. To these two gentlemen and to Dr. Ross Arnett, Dr. Henry Dietrich, Dr. Mont Cazier, and Dr. Hugh B. Leech, the author expresses his gratitude for their generosity in loaning him their material.

The genus *Dectes*, which also belongs here, is being treated with the Nearctic genera, except for its inclusion in the following key, even though one species does penetrate rather deeply into Mexico.

Key to Genera

1. Elytral apices bidentate; antennal scape always strongly bicarinate ventro-laterally.....*Canidia*
   Elytral apices not bidentate; antennal scape sometimes bicarinate 2
2. Pronotum with a distinct transverse sulcus across base, containing a row of coarse punctures.....*Nyssodectes*
   Pronotum without transverse sulci.....3
3. Antennal scape bicarinate ventro-laterally.....*Canidiopsis*
   Antennal scape not carinate.....4
4. Elytra at base with an elongate crest; antennal scape beneath excavated beyond middle.....*Pseudocanidia*
   Elytra not crested; antennal scape not excavated.....*Dectes*

NYSSODECTES Dillon, gen. nov.

Type of genus: *Nyssodrys veracruzi* Dillon, spec. nov.

Small, subcylindrical beetles. Head impunctate; front convex, strongly narrowed between and below eyes, a little wider than high; eye with lower lobe subtriangular or broadly ovate, one-fifth to one-fourth again as tall as gena, isthmus rather narrow, upper lobe slightly wider than isthmus, strongly arcuate, separated by about one of their widths; antennal tubercles not prominent or robust, strongly divergent apically. Pronotum one-fourth to one-third wider than long, sides equally narrowed to base and apex from the obsolete and unarmed lateral tubercles, which are placed at basal fourth; disk without tubercles, subcylindrical, impunctate except for an irregular row in the well-impressed basal sulcus. Elytra with basal gibbosity obsolete; disk uniformly, deeply punctate to apical third or fourth where the punctures suddenly terminate, without costae or carinae; apices emarginate, the outer angle acutely dentate, the inner one prominent but unarmed; humeri prominent, rounded. Prosternal process narrow, one-sixth as broad as a procoxal cavity; mesosternal process three times as broad as prosternal, one-half as broad as a mesocoxal cavity. Abdomen with fifth sternite slightly longer than fourth in male, one-half again as long in female. Legs successively much longer from front to rear pairs, the front ones quite short; profemora strongly clavate, the other

two pairs successively much more slender in both sexes, metafemora in male attaining apex of fifth sternite or nearly so, in female attaining apex of fourth sternite; metatarsi with first segment at least equal in length to remainder together. Antennae about twice as long as body in male, and nearly equally as long in female, with scattered fringing hairs beneath; scape nearly or quite attaining pronotal base, slender, cylindrical throughout, neither flattened nor carinate beneath, and scarcely produced downwards at apex; third segment one-tenth longer than first, nearly straight; fourth feebly shorter than third; rest gradually diminishing in length, except tenth and eleventh which are slightly elongated.

Remarks: Differs from all the other known genera of this group in that the pronotum has a distinct basal sulcus and is unarmed laterally. Like *Dectes* and *Canidia*, this genus has the pronotal disk without tubercles, and the elytral basal gibbosities nearly wanting, but here the elytral apices are emarginate, with only the outer angle dentate, and the lower ocular lobe is subtriangular or broadly ovate.

Key to Species

Head with a yellowish vitta behind lower ocular lobe; elytra with a broad band apically, the apices narrowly emarginate, the inner angles acute and prominent.....*veracruzi*
Head without any lateral vittae; elytra without a broad band apically, the apices broadly emarginate-truncate, the inner angles rounded.....*roseicollis*

Nyssodectes veracruzi Dillon, spec. nov.

Male. Piceous; body above and antennae dark brown, front, legs, and body beneath ashy, pubescent. Head with a broad, whitish vitta behind lower lobe of eyes and a narrower one medially between upper ocular lobes and antennal tubercles, extending onto front. Pronotal disk largely yellowish pubescent to each of the deflexed sides, medially with two rather large, semicircular, dark brown maculae, one on apical and one on basal margin, the former margined on each side with an oblique,

broad, rosaceous vitta, which are contiguous at middle. Elytra just before apex with a broad band of yellowish and with two yellowish vittae, one along suture, attaining apical band but not scutellum, and a broader one from base near humerus, often extending to apical band but sometimes interrupted behind middle; extreme apex fuscous, contrasting with the dark brown disk. Metepisterna covered with dense yellowish pubescence. Femora on at least basal halves with pale yellowish integument, tibiae on posterior surface and tarsi entirely, fuscous pubescent. Antennae with second to sixth or seventh segments reddish brown, apically infuscated; scape dark reddish brown, the remaining segments piceous pubescent.

Head impunctate; front strongly narrowed between and below eyes, distinctly wider than high; eye with lower lobe about one-fifth again as tall as gena, broadly obovate. Pronotum about one-third wider than long; sides broadly arcuate, widest at basal third, base and apex subequal; lateral tubercles entirely wanting; disk with an undulating row of deep, rather fine punctures in the sharply defined basal sulcus, rest of surface impunctate. Elytra with basal gibbosity subobsolete; disk covered with deep, rather close-set, moderately coarse punctures from base to apical fourth, punctation often denser toward suture; apices narrowly, distinctly emarginate, both angles of emargination prominent, the outer one acutely dentate, the inner one subacutely angulate. Fifth abdominal sternite a little longer than the fourth, broadly, rather strongly emarginate at apex. Metafemora slender, at least attaining tip of abdomen. Antennae about twice as long as body, the fifth segment surpassing apex of elytra, beneath with a very few fringing hairs on first four segments; scape slender, attaining pronotal base or nearly so; third segment one-tenth longer than first, slightly arcuate; fourth feebly shorter than third; rest very gradually decreasing in length, except tenth and eleventh which are slightly elongated.

Length 5.5–6.5 mm.; width 1.4–1.8 mm.

Holotype male and *2 paratypes:* San Andres, Vera Cruz, Mexico; Feb. 6–12, 1953 (D. G. Kissinger) [author's collection].

Remarks: This species is very similar to *N. roseicollis* but differs in that the yellowish pubescence forms a broad vitta behind the lower ocular lobe, extending broadly over the disk of pronotum, and forming a transverse band before elytral apex and an elongated macula on metepisterna. Moreover, the elytral apices are deeply emarginate, with the sutural angles acute, the pronotum lacks lateral tubercles entirely, and the eye is of different shape.

Nyssodectes roseicollis Bates

Nyssodrys roseicollis Bates, 1872, Trans., Ent. Soc. Lond. XX, p. 221; 1881, Biol. Centr. Amer. Col. V, p. 181, 417, pl. 14, f. 4.

Male. Piceous to black, sparsely cinereous pubescent. Head often with a short, median, whitish vitta between eyes and antennal tubercles. Pronotum with integument marked with a reddish letter 'H' which is covered with pale yellow or red pubescence, sometimes interrupted at base, sometimes very broad. Elytra mahogany red, dark brown pubescent, marked with a slender, sublateral, arcuate, yellowish vitta which commences at base near humerus, extending thence along side of disk to close to apex where it curves to suture. Metepisterna with pubescence feebly denser than elsewhere on body beneath; femora dull orangish on basal two-fifths. Antennae with second to sixth segments orange-brown, infuscated apically, remaining segments fuscous.

Head impunctate; front strongly constricted between and below eyes, about as high as wide; eye with lower lobe broadly subtriangular, about twice as broad at upper margin as at lower, one-fourth again as tall as gena. Pronotum one-fourth again as wide across lateral tubercles as long; sides sublinearly narrowing to apex, slightly constricted at base; lateral tubercles feeble, placed at basal fourth, armed with a minute tooth; disk impunctate except for a row of moderate-size punctures in the rather distinct basal sulcus. Elytra with basal gibbosity broad, feebly prominent; disk not densely, rather coarsely punctate

from base to apical fourth; apices very broadly, slightly emarginately truncate, the inner angle round, the outer produced into a short, robust tooth. Metafemora attaining apex of fifth sternite, rather slender. Fifth sternite slightly longer than fourth, deeply emarginate at apex. Antennae with fifth segment slightly surpassing elytral apex, with scattered fringing hairs beneath; scape slender, reaching nearly to base of pronotum; third segment one-tenth longer than first, nearly straight; fourth feebly shorter than third; rest gradually diminishing in length, except tenth and eleventh which are slightly elongated.

Female. Similar to male but fifth sternite one-half again as long as fourth, tapering to apex, which is narrowly truncate; metafemora more slender, extending only to apex of fourth sternite; antennae slightly shorter, the fifth segment not quite attaining elytral apex, and a little more densely (but still very sparsely) fimbriate.

Length 6.5–7 mm.; width 2.0 mm.

Type locality: Chontales, Nicaragua. Distribution: From Nicaragua to Mexico. Mexico: 2; San Andres, Vera Cruz, Feb. 6–12, 1953 (D. G. Kissinger) [DGK].

Remarks: No specimens from the type locality were encountered, but the two at hand from Mexico agree very closely with Bate's remarks in the Biologia Centrali-Americana (p. 181) concerning examples from the latter region.

CANIDIA Thomson

Canidia Thomson, 1857, Arch. Ent. I, p. 193; 1860 Class. Ceramb., p. 7, 14.

Type of genus: *Canidia cincticornis* Thomson, by monotypy.

Moderately small, cylindrical beetles. Head impunctate, very feebly transversely impressed behind antennal tubercles on vertex; front about one-fifth to two-fifths again as wide as high, feebly narrowed between eyes, strongly so below, conspicuously tumid; eye with lower lobe elongate-ovate, erect, subequal to gena in height, upper lobe scarcely wider than isthmus, separated by three or four times their width; antennal tubercles ro-

bust, moderately prominent, widely divergent. Pronotum very feebly wider across base than long, apex subequal to base; lateral tubercles low, small, at basal third of pronotum, armed with a long, acute, strongly recurved spine; transverse sulci wanting; disk with only a trace of tubercle at middle, rest of surface even, not densely, rather finely punctate. Elytra with basal gibbosity obsolete, without crest or carina; disk moderately coarsely and densely punctate basally, the punctures gradually finer apically, without trace of costae, and with but a very few, long, flying hairs, which are sprinkled very sparsely at base and on apical declivity; apically declivous from behind middle, apices deeply emarginate, bidentate, the tooth on outer angle much larger; humeri prominent, rounded, impunctate. Prosternal process from one-tenth to one-fifth as wide as a procoxal cavity; mesosternal process twice as broad as the prosternal, about three-eighths as broad as a mesocoxal cavity. Fifth abdominal sternite scarcely longer than fourth in male, one-half or more again as long in female. Legs successively more elongate from front to rear; femora clavate, less strongly so in female, metafemora in female attaining apex of fifth abdominal segment, in male strongly surpassing it; protarsi in male slightly dilated, metatarsi with first segment subequal to next two together in both sexes. Antennae slightly longer than body in female, one-quarter longer in male, beneath with scarcely any fringing hairs; scape elongate, extending behind lateral tubercles, often nearly to base in male, gradually widened to beyond middle, thence slightly tapered apically, strongly flattened on ventro-mesial surface, the plane area margined on each side by a smooth, uniform carina, its extreme apex produced into a short, broad, emarginate process; third segment subequal in length to first; rest gradually diminishing.

Remarks: The emarginate and bidentate elytral apices, the elongate metafemora, and the form of the scape are especially analytical, but the genus is further distinguished by the strongly convex or tumid front, by the convex elytra which lack basal gibbosities, and by the cylindrical pronotum which bears no tubercles on the disk but possesses strong lateral spines.

Canidia cincticornis cincticornis Thomson

Canidia cincticornis Thomson, 1857, Arch. Ent. I, p. 194.
Dectes cincticornis Thomson. Lacordaire, 1872, Gen. Col. IX, p. 775.

Male. Black, densely covered with a clear fuscous pubescence. Head on front sometimes clouded with gray pubescence. Body beneath medially and legs sparsely hoary pubescent; metafemora apically fuscous (as are the mesofemora in part); tibiae irregularly annulate and apically fuscous; tarsi with apices of segments annulate with blackish. Antennae with scape and second segment largely black, the first basally sometimes sparsely covered with dull gray pubescence; remaining segments densely bright gray pubescent, the apices of each broadly black-annulate.

Entire upper surface minutely punctulate. Head impunctate; eyes with lower lobe elongate-ovate, erect, about one-sixth again as tall as gena. Pronotum one-third wider across lateral tubercles than long, sides anteriorly sloping, base and apex subequal in width; lateral tubercles scarcely distinguishable from sides, feebly elevated, placed near basal fourth, ending in a long, rather robust, acute, arcuate tooth that is directed strongly obliquely backwards; disk usually without trace of tubercles, sometimes with a feebly elevated one medially, entire surface rather sparsely, finely, irregularly punctate. Elytra with basal gibbosity scarcely evident, without crest; disk moderately coarsely, deeply punctate from base to apex, the punctures a little finer and denser on sutural half than on outer; apices deeply emarginate, the sutural angle produced into a short, acute tooth, the outer angle into a much longer similar one. Mesosternal process anteriorly arcuately declivous. Fifth sternite about one-fourth again as long as fourth, apically broadly emarginate. Metafemora distinctly surpassing apex of fifth sternite. Antennae more than one and one-quarter times as long as body, seventh segment attaining apex of elytra, with two or three fringing hairs apically on first and second segments; scape slightly arcuate, attaining basal fourth of pronotum, apical

process apically bilobedly emarginate; third segment nearly straight, subequal in length to first; fourth much shorter; rest gradually decreasing in length.

Female. Metafemora reaching to middle of fifth sternite, which is nearly twice as long as fourth, with its apex subtruncate. Antennae with eighth segment attaining elytral apex.

Length 8.3–12 mm.; width 3–3.8 mm.

Type locality: Costa Rica. Distribution: Known only from Costa Rica and Nicaragua. Costa Rica: 2; La Caja, nr. San Jose, 900 m. (M. Valerde). 1; Atenas (Schild and Burgdorf). 1; San Lucas, July 8, 1934 (C. H. Ballou) [all USNM].

Remarks: When critically examined, all the Costa Rican specimens were found to possess a shadow of the dark macula on the elytra which is so prominent in *balteatus*.

Canidia cincticornis balteatus Lacordaire

Dectes balteatus Lacordaire, 1872, Gen. Col. IX, p. 775.

Male. As in the type form, but upper surface clear gray pubescent. Head fuscous in whole or around occiput. Scutellum fuscous. Elytra each with a large, transverse, blackish macula or bar at apical two-fifths and occasionally with a small, rounded, similar macula just before apex. Body beneath and legs densely bright gray pubescent; metafemora sometimes broadly marked with black at apex of outer surface; tibiae broadly black-annulate at apex; tarsi with only lobes of third segment broadly tipped with black

Length 9–11.5 mm.; width 2.9–4.0 mm.

Type locality: Oaxaca, Mexico. Distribution: From southern Mexico to Costa Rica. Guatemala: 5; no further data [AMNH; CAS]. Nicaragua: 3; Managua (René) [USNM]. Costa Rica: 1; no further locality (F. Nevermann) [USNM].

Remarks: The arrangement of these two forms as subspecies is tentative, pending additional material. They may prove to be mere varieties or full species, but no morphological basis for the latter treatment was found.

(*To be continued*)

A New Aulocostethus from Florida (Hymenoptera: Pompilidae)

By Howard E. Evans, Cornell University, Ithaca, N. Y.

Few genera of pompilid wasps are so poorly known as *Aulocostethus* and *Epipompilus*, the two genera which make up the tribe Epipompilini of the subfamily Pompilinae. Bradley, in preparing his revision of this group (1944, Trans. Amer. Ent. Soc., 70: 139–147), was able to find only two specimens of *Aulocostethus* in American museums, and none at all of *Epipompilus*. Males of both genera are entirely unknown, and none of the four species of *Aulocostethus* and of the two of *Epipompilus* is known from more than two specimens. Both genera inhabit Central America and northern South America.

The discovery of another specimen of *Aulocostethus* is an event in itself, and when that specimen represents a striking new species from within the limits of the United States, the event is particularly exciting. In coloration, this new form is very different from any described species, the wings being wholly dark and with a coppery luster, and the body being unspotted but brightly patterned with black and red. Structurally, the species agrees will with the generic diagnosis given by Bradley (op. cit., p. 140). It differs from *aztecus* Cresson in that the pronotum is not margined laterally and the posterior claws are not different from the others; it differs from *excelsus* Bradley in the more prominently protruding front and the shorter pronotum. To the generic venational characters cited by Bradley may be added the fact that the anal lobe of the hind wing is only about .3 the length of the submedian cell, and the anal vein is straight, paralleling the preaxillary furrow, the transverse median vein leaving it at an angle.

Aulocostethus pulcherrimus new species

Type. ♀, Everglades National Park, Dade Co., Florida, December 30, 1953 (H. V. Weems, Jr.) [U. S. National Museum no. 6270].

Description. Length 6.5 mm.; fore wing 5.7 mm. Head and thorax black except as follows: palpi brownish, tips of the labial palpi pale; apical half of mandibles rufo-castaneous; antennae dark brown; legs dark brown (except the coxae black), the inner surface of the front femora with a longitudinal streak of light brown; entire anterior, lateral, and posterior border of pronotum narrowly rufous; scutellum, median portion of metanotum, and entire propodeum, bright rufous. Entire abdomen bright rufous and strongly shining, except the extreme base of the first segment black. Front wings wholly and evenly dark fuliginous, with a coppery luster. Hind wings nearly hyaline basally, the apical fourth clouded.

Clypeus, front, vertex, pronotum, and mesonotum with rather abundant short, blackish hairs; clypeus, front, and temples also with shorter, silvery tomentum; basal six segments of antennae with suberect setulae on the dorsal surface; base of mandibles prominently setose; legs and dark parts of thorax with brownish pubescence which grades into silvery on the front coxae and the mesopleura; propodeum and abdomen with silvery pubescence, the apical abdominal segment also with some long, pale hairs above and below.

Mandibles broad, with a single strong tooth on the inner margin. Labrum barely protruding from the emargination of the clypeus. Clypeus 2.4 times as broad as high, its apical margin arcuately emarginate. Head, exclusive of mouthparts, one and one quarter times as broad as high. Front convex, strongly protruding above the antennal bases, perpendicularly declivous between the sockets. Front dull, with microscopic sculpturing and dense, shallow punctures. Malar space nearly as long as the antennal pedicel. Eyes conspicuously hairy. Middle interocular distance .57 times the transfacial distance; upper interocular distance .8 the lower interocular distance. Ocelli in a broad triangle; postocellar line greater than ocello-ocular line as 7:4. Antennae slender and elongate, the first four segments in a ratio of about 15:6:13:15, segment three about 4 times as long as thick, and equal to .6 the upper interocular distance.

Pronotum much shorter than the mesonotum, its anterior surface rather steeply declivous. Propodeum sloping evenly, without a median impression. Pronotum somewhat shining, the mesonotum somewhat more punctate and less shining, the remainder of the thorax and propodeum with enough microscopic sculpturing and close punctures to render the surface rather dull; propodeum and upper portion of the metapleura with the sculpturing in the form of very fine striations. Front femora moderately incrassate. Middle and hind tibiae with several rows of very short spines above. Tarsi with conspicuous pubescence in which a few weak spines are intermingled. Claws dentate, the tooth stout and erect.

Basal vein of the fore wing arising very slightly beyond the junction of the transverse median vein. Stigma four times as long as wide; marginal cell slightly more than three times as long as wide, removed from the apex of the wing by less than half its length. Third submarginal cell much longer than the second, removed from the outer wing margin by much less than its own length. Second recurrent vein arising on the subdiscoidal vein about two-thirds the distance from its base. Hind wing with the cubitus arising beyond the transverse median vein a distance about equal to the length of the latter vein. The major veins of both wings attain the outer wing margin.

Abdomen short and stout, the integument shining; apical segment broad and slightly depressed.

Review

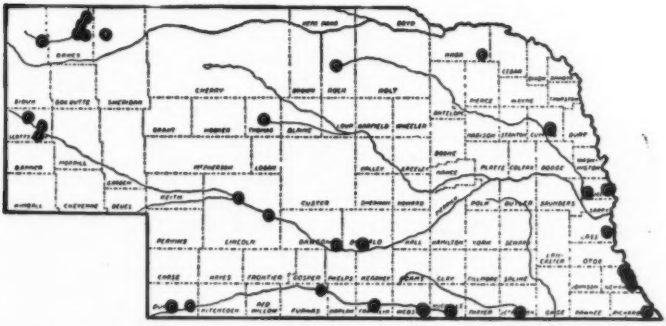
ATLAS OF SCALE INSECTS OF NORTH AMERICA. Vol. VII. The families Aclerdidae, Asterolecaniidae, Conchaspididae, Dactylopiidae and Lacciderídae. By G. F. FERRIS. Pp. 1–233, 94 figs. Stanford University Press, Stanford, California, 1955.

This volume is a continuation of Professor Ferris' well known Atlas, and it follows the same general plan and style as the preceding volumes. Two families are treated more briefly in order not to duplicate material in recent monographs by other authors. The families not yet covered in this series are the Coccidae (= Lecaniidae), Orthezidae, and Margarodidae.—R. G. S.

The Status of Dermacentor variabilis in Nebraska

By WILLIAM F. RAPP, Jr.[1]

The American dog tick *Dermacentor variabilis* (Say) is the common tick found on man and domestic animals in Nebraska. If one examines Cooley's[2] (1938:28) distribution map for *Dermacentor variabilis* one gains the impression that the species is distributed over the entire state, except in the southwestern part of the panhandle. However, when one plots on a map the localities where *D. variabilis* has been taken one finds that the species has a restricted distribution in Nebraska. Figure one shows the distribution for *D. variabilis* in Nebraska based upon collected specimens. It is interesting to know that all specimens have been taken in the forested parts of the state either in the flood plain forests or in the Yellow Pine regions. Although Nebraska is from the ecological viewpoint in the grassland biome of North America, both the deciduous and Yellow Pine forests form very important subclimaxes in Nebraska. The deciduous forest areas are located along the principal rivers in the state. The Yellow Pine areas are concentrated in the northwestern part of the State.



[1] Entomologist, Division of Sanitation, State Department of Health, Lincoln, Nebraska.

[2] 1938. Cooley, R. A. The Genera *Dermacentor* and *Otocentor* (Ixodidae) in the United States, with Studies in Variation. *National Institute of Health Bulletin*, No. 71.

In Nebraska the nymph appears to be fairly common on the ears of *Peromyscus manulatus*. Many of the *P. manulatus* taken in river bottom woodlands are parasitized by *D. variabilis*. The nymph has never been found on specimens of *P. manulatus* taken in grasslands.

In this report the specimens collected are arranged alphabetically by county. In the specimens listed, the following abbreviations are employed: (N.S.D.H.), Nebraska State Department of Health; (U.N.), Department of Entomology, University of Nebraska; (R.M.L.), Rocky Mountain Laboratory; (L.R.E.), private collection of Dr. Lafe R. Edmunds.

BUFFALO Co.: July 13, 1953 (N.S.D.H.). CUMING Co.: West Point, dog (U.N.). DAWES Co.: Bordeux Station, April 24, 1949, dog (R.M.L.); Chadron, June 11, 1945 (U.N.), June 4, 1941 (U.N.), July 15, 1944 (U.N.), May 1, 1945 (U.N.), Mann Schoolhouse, 8 miles south of Chadron, April 25, 1949, *Sciurus niger* (R.M.L.); Chadron State Park, April 26, 1949, horse (R.M.L.), Lindekin ranch, northeast of Chadron (R.M.L.); Edwin Mann ranch, 8 miles south of Chadron, May–June 1949 (R.M.L.). DAWSON Co.: Overton, July 13, 1953 (N.S.D.H.). DOUGLAS Co.: Omaha, July 15, 1942 (R.M.L.); Elkhorn River west of Omaha, June 26, 1946 (R.M.L.). DUNDY Co.: Parks, April 27, 1954 (N.S.D.H.); Benkelman, April 28, 1954 (N.S.D.H.). Ex. *Peromyscus maniculatus*. FRANKLIN Co.: Franklin, July 14, 1954 (N.S.D.H.). Ex. *Peromyscus manulatus*. FURNAS Co.: Oxford, April 30, 1954. Ex. *Peromyscus manulatus*. JEFFERSON Co.: Endicott, July 15, 1954 (N.S.D.H.). KNOX Co.: Wausa, June 29, 1954 (N.S.D.H.). Ex. *Blarina brevicaude*. LINCOLN Co.: Brady, July 13, 1953; North Platte (N.S.D.H.), July 18, 1953, dog (N.S.D.H.). NEMAHA Co.: Peru, July 7, 1953 (N.S.D.H.); Brownville, July 28, 1953 (N.S.D.H.). NUCKOLLS Co.: Superior, July 13, 1954 (N.S.D.H.). OTOE Co.: Nebraska City, May 26, 1945, *Marmota monax* (U.N.). RICHARDSON Co.: Fargo, Argo Twp., September 3, 1954 (N.S.D.H.). ROCK Co.: Bassett, June 8, 1953 (N.S.D.H.). SCOTTS BLUFF Co.: McGrew, June 22, 1953 (L.R.E.); Minatare, July 2, 1953, (L.R.E.); Mitchell, April 30, 1953 (L.R.E.). SHERIDAN Co.: Hay Springs, June, 1944 (U.N.). SIOUX Co.: Fort Robinson, June 10, 1937, July 15, 1935 (R.M.L.). THOMAS Co.: Halsey, April 14–16, 1933, sheep, June 2, 1933 (R.M.L.). WEBSTER Co.: Guide Rock, July 13, 1954 (N.S.D.H.).

Entomological Departments

Believing such material to be of interest to its readers, ENTOMOLOGICAL NEWS herewith solicits articles similar to the one here presented and giving information on the organization and activities of entomologists in colleges, universities, museums, and in government and other groups.

University of Illinois

Teaching Department

Entomology has been taught at the University of Illinois since the college year 1869–1870. The University, then called Illinois Industrial University, opened its doors in March 1868 and entomology, although listed in the circular and catalog for 1868–1869, was apparently not taught the first year. Entomology was announced as part of a course in the Department of Natural History in the third term of the second college year. The catalog announcement read as follows—"Entomology: classification of insects: habits of those injurious to vegetation with means of checking their ravages. Habits of beneficial species." Major J. W. POWELL, M.A., who was scheduled to teach the course, had been appointed Professor of Natural History and Geology while in the western states with an army expedition. Powell did not fulfill his teaching appointment although he made some collections for the university while in the west.

The first definite course in entomology was given in the spring term of the college year, 1869–1870, by T. J. BURRILL, then Professor of Botany and Horticulture, who gave all the instruction that was offered in both Botany and Horticulture. His first class in entomology consisted of four students. Burrill was a young man who had been superintendent of the Urbana Public Schools. He is, perhaps, remembered best for his later work on the transmission of "fire-blight," a plant disease of fruit trees which he found to be carried by aphids. This work is one of the earliest, if not the earliest, in which an insect has been shown to transmit a plant disease.

Professor Burrill continued to teach this lone course in entomology until the end of the college year 1883–1884. The

university announcement for 1876–1877 carried the following course description which doubtless originated from Professor Burrill:

"ENTOMOLOGY.—The time given to this study is eleven weeks. After three or four introductory lectures upon the most useful literature and the methods of collecting and preserving specimens, about five weeks are devoted to the special anatomy of insects and the outlines of classification,—four lectures and one review or two hours of practical work per week. During this time students make collections as fast as possible, reserving, however, the determination of species until the last half of the term. During the latter portion of the term, three lectures per week are given upon injurious and beneficial insects, methods of exterminating, etc., and four hours per week are taken for laboratory work, naming species, noting habits of observed specimens, making detailed descriptions, etc. A careful and complete description of some one species, illustrated by drawings of important parts, is made by each student and deposited in the library of the school. The large collection of named species (about 3,000 species prepared by State Entomologist LE BARON), the ample reference library, the drawings and other illustrations to which students have access, are invaluable aids in the study. The most important reference works are Westwood's "Introduction to the Modern Classification of Insects," Packard's "Guide to the Study of Insects," Harris' "Insects Injurious to Vegetation," and the publications of the Smithsonian Institute, Entomological Societies, and the reports of State Entomologists."

"Students are required to provide themselves with collecting nets and bottles, pins and lined boxes and books for notes. Microscopes and other required apparatus are furnished by the University."

In 1884 STEPHEN A. FORBES, who was serving as State Entomologist and Curator of the Illinois State Natural History Society as well as teaching in Normal University, at Normal, Illinois, was appointed Professor of Zoology and Entomology at what had, by then, become known as the University of Illinois. The position had been offered to Forbes in 1882 and it had taken legislative approval to have his offices moved to Urbana. This approval was not obtained until 1884 and on January 1, 1885, Forbes took up his duties as teacher of

Entomology and Zoology as well as continuing his other duties with the state agencies. From this date entomological instruction at the University developed steadily.

The entomological library and collections of the State Entomologist's office became available to students who also were privileged to observe and assist in practical entomological operations and research. One term of entomology was offered in the freshman year from 1885 to 1891 and a two-term course was taught from 1892 to 1894. Five courses made up the entomological curriculum from 1894 until 1900. The five courses were "General and Economic Entomology," "Advanced Entomology," "Elementary Entomology" and "Advanced Economic Entomology." Until 1900 courses in entomology were listed as a part of the work of the combined Department of Zoology and Entomology; in the catalog of 1900–1901, for the first time, such courses were listed separately. Dr. J. W. FOLSOM was brought from Harvard in 1900 as an instructor in entomology and assumed an important role in the teaching of entomology, especially economic entomology. By 1910 course offerings had been increased to 10.

The DEPARTMENT OF ENTOMOLOGY was organized separately from Zoology in 1909. Professor FORBES continued as Head of Department of Entomology and gave up his work in Zoology which was taken over by H. B. Ward. Two years later (1911), A. D. MACGILLIVRAY of Cornell University was appointed an Assistant Professor. He developed the courses in insect morphology and insect taxonomy. For the next ten years the entomological staff consisted of FORBES, FOLSOM, and MACGILLIVRAY. Forbes retired as head of the entomological work in 1921 but continued on as Chief of the State Natural History Survey and C. L. METCALF was brought from Ohio State University to head the Department of Entomology. He continued in charge until 1947. Prof. Folsom resigned in 1923 and Professor MacGillivray died suddenly in 1924. During Metcalf's period of service, he brought in as staff members W. V. BALDUF in 1923 to head the taxonomic work, W. P. HAYES in 1924 for insect morphology, O. W. PARK and, later, V. G.

MILUM as apiculturists, and C. W. KEARNS for insecticide teaching. When Prof. Metcalf arrived on the campus, ROBT. D. GLASGOW was serving as an instructor. Glasgow resigned about 1927. In 1947 Prof. Metcalf was placed on health retirement and died in 1948. W. R. HORSFALL was appointed in 1947 to take over the teaching of Medical Entomology and some courses in Economic Entomology. W. P. HAYES was made acting head of the department in 1947 and was appointed head in 1948. That year Hayes brought G. S. FRAENKEL from the University of London to head the teaching and research in insect physiology.

The full time, permanent teaching staff at present consists of Professors BALDUF, HAYES, FRAENKEL, KEARNS and MILUM as full Professors and W. R. HORSFALL an Associate Professor. Three half-time teaching assistants help out in the elementary classes. On the research staff there are at present four full-time Research Associates, Drs. H. LIPKE, STANLEY FRIEDMAN, JAMES STERNBERG and S. C. CHANG, in addition to ten half-time Research Assistants.

The research programs are supported by grants from the University Research Board, two grants from the Rockefeller Foundation, one from the U. S. Public Health Service, and two from the Surgeon General's Office. Professor Kearns is working on insect toxicological problems, Professor Fraenkel on insect physiology, particularly on insect nutrition, Professor Horsfall on mosquito problems, and Professor Balduf on insect bionomics.

In the teaching work Professors Kearns and Horsfall teach sections of Agricultural Entomology assisted by two teaching assistants, Professor Balduf teaches a course in Introductory Entomology for Liberal Arts and Science students. He has one teaching assistant. In addition Professor Balduf teaches two courses in insect taxonomy. Other courses taught by Dr. Kearns are Insect Toxicology and Chemical Control of Insects, and Professor Horsfall teaches Medical Entomology, Insect Bionomics, and Advanced Economic Entomology. Professor Milum teaches Apiculture and has charge of the

laboratory work in Agricultural Entomology. There are two courses in Insect Physiology taught by Professor Fraenkel; and Professor Hayes has charge of the two courses in Insect Anatomy, two semesters of Morphology and Taxonomy of Immature Insects, and Field Crop Insects.

Drs. GEORGE C. DECKER and HERBERT H. ROSS of the State Natural History Survey hold professorships on the Graduate College teaching faculty and are authorized to teach and direct research of graduate students. Prof. Ross conducts a graduate seminar in Insect Taxonomy. Both Ross and Decker direct the research of a number of our graduate students. Those students with Dr. Decker are doing thesis problems in Economic Entomology and those with Dr. Ross work in Insect Taxonomy. They have available the extensive collections of the State Natural History Survey.

The Department of Entomology at Illinois is a unit of the Biological Division of the COLLEGE OF LIBERAL ARTS AND SCIENCES and not, as in most institutions, a department in the College of Agriculture. Consequently, the teaching staff has no connection with the Agricultural Experiment Station and the staff members are not assigned to Experiment Station research projects, which work at Illinois is done by Dr. George C. Decker of the Natural History Survey and his staff. Research projects in the department are of the investigators' own choosing. Staff members are on nine months appointments and are thus available for summer appointments elsewhere, which may consist of either research or teaching appointments and are an opportunity for them to gain valuable experience either in the field or laboratory.

Undergraduate enrollment of students majoring in entomology is small and consequently a great deal of stress is put on the teaching of graduate students and the department has become more of a graduate department in entomology. With but few undergraduate majors, it is obvious that few of the graduate students are Illinois students. Graduate enrollment in recent years has varied from 34 to 45 students, most of whom are going on from Master's degrees to Ph.D. work. A large

majority of the graduate students are from out of state or foreign countries.

To many people, not familiar with the entomological work at Illinois, there is confusion as to the relationship between the DEPARTMENT OF ENTOMOLOGY and the ILLINOIS STATE NATURAL HISTORY SURVEY. Since an account of the history and work of the Survey is to be presented along with this article, it is sufficient to say that the State Natural History Survey is a separate state agency located on the campus and is a division of the State Department of Registration and Education and not an integral division of the University of Illinois. With the presence of the Survey on the campus the department is able to avail itself of the magnificent facilities and staff of the Survey. Both the Department and the Survey operate separate entomological libraries, causing some duplication of works available, but on the whole make available library facilities surpassed by very few other institutions. The location of the Survey with its excellent insect collection makes it unnecessary for the department to maintain a permanent collection and department efforts are put into assembling collections for teaching purposes.

The department owns a series of about 15,000 insects hermitically sealed in glass tubes which represent the life-stages and injury of most of the major American economic insects. These are used for classroom teaching. A series of about 200 cloth teaching charts of insects painted locally is also available for class use. Three entomological collections donated to the department include the Nason, Bolter, and MacGillivray collections which constitute about 306,000 pinned specimens. The MacGillivray collection consists of about 1,000 species of Tenthredinoidea and about 400 type specimens. These collections have been turned over to the State Natural History Survey where they can be cared for properly and are in a fireproof building. The department owns and maintains a collection of about 6,000 immature stages of insects preserved in alcohol which is used for reference and class work.—WM. P. HAYES.

Illinois State Natural History Survey

In three years the Illinois State Natural History Survey will celebrate its centennial, for its beginning stems from the organization of the State Natural History Society in 1858. This organization metamorphosed several times. Its first changes were to the State Museum of Natural History in 1871, and then to the State Laboratory of Natural History in 1877.

In 1865 the president of the State Horticultural Society, Parker Earle, called the attention of the society to the need for entomological assistance, and a resolution was passed by the group, "That we most urgently pray the honorable legislature of our great state to appoint a state entomologist, that agriculturists and horticulturists may not quite despair of ever overcoming the giant insectivorous difficulties in the way of success in their professions." Two years later the society's desire was fulfilled by the legislature, with the appointment of the first Illinois STATE ENTOMOLOGIST. WALSH, LEBARON, and THOMAS held this position in succession.

In the course of time, the directorship of the State Laboratory of Natural History and the position of State Entomologist dropped onto the shoulders of a young cavalry officer, Captain STEPHEN ALFRED FORBES, a most unique and capable person. He held both of these positions until 1917, when a reorganization of the state government brought together the laboratory and the State Entomologist's office into one unit called the NATURAL HISTORY SURVEY. All of the responsibilities of both parent organizations were included, save for the enforcement and regulatory duties of the State Entomologist which were transferred to the State Department of Agriculture. Forbes retained the position of Chief of the Survey until his death in 1930 when he was succeeded by Dr. T. H. FRISON. After the death of Frison in 1945, Dr. HARLOW B. MILLS was appointed the third chief.

The Survey is established by law on the campus of the University of Illinois, where it is instructed to cooperate closely with the staff at the University. Beyond a great deal of informal cooperation, three members of the Survey staff are on

the University's Graduate Faculty, and Dr. GEORGE C. DECKER holds the title of Entomologist for the Illinois Agricultural Experiment Station.

Entomological work at the Survey falls into two general fields. The SECTION OF ECONOMIC ENTOMOLOGY, headed by DR. DECKER, does all of the research on noxious insects usually done by experiment stations in other states. With Dr. Decker, whose interests are extremely broad, is a competent staff, consisting of J. H. BIGGER working on forage pests and soil insects, W. N. BRUCE on parasites and household pests, STEWART CHANDLER on fruit insects, L. L. ENGLISH on ornamental and greenhouse problems, NORMAN GANNON on field pests and toxicology, WM. LUCKMAN on corn pests, PAUL SURANYI on diseases of insects, and JOHN WRIGHT on truck insects.

Historically, much attention has been given to insects attacking corn. Two decades before the European corn borer invaded Illinois, our entomologists were testing varieties of corn, which were popular in Illinois, against this pest, in plots established in Ohio. Later pioneering work was done on the field treatment of corn with the newer insecticides, which researches have been of great value. It is impossible to list all of the problems successfully attacked by this group. Suffice it to say that Bruce's investigations resulted in the first method of successfully protecting farm animals from tabanid flies, and in the hard-bait method of controlling house flies.

The research program is completely modern and highly fluid. The attempt is made to meet new problems which appear, and, even though each man has a special field of research, all may be called in to meet some special problem which may arise.

The second general field of entomological interest is in the SECTION OF FAUNISTIC SURVEYS AND INSECT IDENTIFICATION, headed by DR. H. H. ROSS. With Dr. Ross are M. W. SANDERSON, who specializes on Coleoptera with special interest in the Chrysomelidae, Scarabaeidae, Staphylinidae, and Elmidae; L. J. STANNARD, who specializes in Thysanoptera and ectoparasites; and Mrs. L. K. GLOYD, on the Odonata. Dr. Ross's

taxonomic interests include the Tenthredinidae, Trichoptera, Culicidae, and Cicadellidae. Also in this group of researchers is P. W. SMITH, who works with the vertebrates and non-insect arthropods. The responsibilities of this section are two-fold. It furnishes an identification service for the people of the state and for entomologists both in and outside of Illinois. It also has a heavy research program on the taxonomy of various groups. The handbooks prepared by this staff or under its auspices are well known and cover such diverse groups as the Aphidae, Orthoptera, Trichoptera, Plecoptera, Culicidae, Miridae, and Cicadellidae. Others are in progress.

The ILLINOIS STATE COLLECTION of insects is an excellent one, and many of its accessions go back to the early days of entomology in the state. Much of the early collecting came from the enthusiasm and diligence of CHARLES A. HART. To this large nucleus others have added throughout the years, and several valuable units have been procured. The J. R. Malloch Diptera are here, and this collection contains many types. The Charles Robertson collection of bees is a part of the reference material in the state collection, as are the Milne caddisflies, and a large collection of Collembola amassed throughout the years by Folsom, Guthrie, Harvey, MacGillivray, and Mills. The Phyllophaga collection is not surpassed anywhere in the western hemisphere.

The outlook on taxonomy at the Survey is a dynamic one, extending far beyond the mechanics of collecting and preserving specimens, and their identification. The data coming from the studies are used in phylogenetic and evolutionary considerations. There is much interest in the points of origin of the Illinois fauna. In other words, the taxonomic information is put to work; it is given depth along with width and breadth.

Entomological research in the Illinois Natural History Survey is broad and it is modern. It has one general advantage not always possible in other institutions. The staff is free to do research alone, without the necessity for division of interest among several other fields. Travel funds and opportunities are usually sufficient for the work. Three Guggenheim Fellowships have been received in four years.

One more point. There are two extension entomologists, H. B. PETTY and STEVENSON MOORE. These men are employed by the ILLINOIS AGRICULTURAL EXTENSION SERVICE, and also carry an appointment with the Survey. Their salaries and travel costs are met by the Extension Service, along with clerical assistance. However, they are housed by the Survey, and are placed in close proximity to the research staff. Functionally they are members of the Survey's entomological family. This is just another point illustrating the excellent cooperation which exists between the University of Illinois and the Natural History Survey.—HARLOW B. MILLS.

The Southwestern Research Station of The American Museum of Natural History

The American Museum of Natural History has announced the establishment of THE SOUTHWESTERN RESEARCH STATION. It is located on the eastern slope of the Chiricahua Mountains, near Portal, Cochise County, in southeastern Arizona. The property is within the limits of the Coronado National Forest at an elevation of 5400 feet.

The station was established for the purpose of making available research facilities for scientists and students in all branches of science, who have problems that can be investigated through the utilization of the faunal, floral and geological features of the area. It will be open during the entire year.

It is operated by the AMERICAN MUSEUM OF NATURAL HISTORY, Central Park West at 79th Street, New York 24, New York and under the direction of Dr. MONT A. CAZIER, Chairman and Curator of the Department of Insects and Spiders, to whom all inquiries should be addressed. Anyone interested in the station should write to the above named individual for the booklet which gives the details of the operation and a general description of the area.

Mann Collection to Smithsonian Institution

The Smithsonian Institution is pleased to announce that Dr. Wm. Mann, Director, National Zoological Park, has given his superb collection of ants to the Institution making the National Collection one of the foremost in the world.

Dr. Mann's Collection consists of approximately 117,000 specimens of ants. Before receiving Dr. Mann's gift the National Collection contained about 1,200 types and has now been enriched by over 700 more. In addition, there are hundreds of species of ants in the Mann collection not previously represented at the Smithsonian and thousands of specimens are from localities throughout the world making available zoogeographical information not previously available.

Dr. Mann's more important works, based largely on material in his collection, deal with the ants of Haiti, Honduras, Guatemala, the British Solomon Islands, Fiji Islands and Brazil. This collection, assembled mostly from field work conducted by Dr. Mann, contains also many specimens acquired by him from the collections of Forel, Emery, Viehmeyer, Santschi, Menozzi, Arnold, Clark, Wheeler and others.

J. F. Gates Clarke
U. S. National Museum

Laboratory Training Courses.

A new Schedule of the Laboratory Refresher Training Courses which will be given by the Laboratory Branch of the Communicable Disease Center during the period July 1955–June 1956 has been issued. Seventeen different courses on laboratory diagnoses of the various viral, bacterial, rikettsial, fungous, protozoan, and other parasitic diseases of man and animals are included. Each course runs for from one to four weeks at designated periods between September 12th and March 30th. For example, there is a course on the Laboratory Diagnosis of Viral and Rikettsial Diseases, a two-weeks' course, that is given October 17th, and again March 12th; and there is a two-weeks' course on Laboratory Diagnosis of Malaria given March 26th. For detailed information, and for application forms write to Laboratory Training Services, Communicable Disease Center, U. S. Public Health Service, P. O. Box 185, Chamblee, Georgia.

Reviews

GRESSITT, J. LINSLEY. 1954. INSECTS OF MICRONESIA. Volume I, Introduction. Bernice P. Bishop Museum, Honolulu, Hawaii. viii + 257 pp., 70 figs., 1 map. Price 14.75 Dutch florins (ca. $3.98).

This series is to contain twenty volumes, of which all save three will be taxonomic reports of insects and some other terrestrial arthropods. Volumes 2 and 20 will be an extended bibliography and summary, respectively. The introductory volume is designed to familiarize workers with environments in Micronesia and to state some of the problems involved in the taxonomy of islandic faunas. A list of collaborators, scope and aims, and previous entomological studies of the islands are given. The sections on geology and soils are brief, and a section on climate gives, among other things, data on wind currents, all-important in the distribution of insects. The flora is divided into zones, with indicator plants given. Then follows a rather long part describing the islands, stressing physical geography and biotic makeup, and augmented by maps and photographs. The faunas of the island groups and of some individual islands are compared as to numbers and kinds of insects and other animals, and as to relationships with intra- and extra-Micronesian faunas. In addition, isolation and the dispersion of insects among islands are treated, the former by citing data on distances between island groups and neighboring Pacific islands. The ecological section contains a number of tables giving the various insects to be found in the strata of the biotic communities and has discussions of habitats and interrelationships of some insects and plants. Insects of economic importance are discussed, those injurious being grouped as to the plant which they attack. Insect collections, collectors, and collecting methods are listed. Bringing up the rear are: an introductory bibliography; a gazetteer, placing the islands by latitude and longitude; and an index. Dr. Gressitt, whose familiarity with the region is shown by the way he handles the subject matter, has obviously put in a lot of time and energy in amassing

so much data on so many places. How many times have systematists wished for such a discussion of the environment which they are studying! Consider, for example, the table of distances as an aid in studying isolation or possible dispersion in a particular problem; such data are found in atlases, but searching for them often takes much time; workers on Micronesia are now spared such searching. Anyone interested in Micronesia, or island life for that matter, whether from an entomological standpoint or not, would probably gain much from this work. It is certainly a "must" for any of the collaborators, and these collaborators will have to be at their best to come up to the standard set by the Introduction.—T. J. Spilman, Entomology Research Branch, U. S. Department of Agriculture.

The Plant Quarantine Problem. By W. A. McCubbin. Pub. by E. Munksgaard, Copenhagen, Denmark. (For Annales Cryptogamici et Phytopathologici, XI.) 255 pages, 1954, Price 32 Kroner. Amer. distributor, Chronica Botanica Co., Waltham 54, Mass. Price $4.80

The author, formerly a plant pathologist of the U. S. Department of Agriculture, has presented here what seems to be a well-rounded and complete summary of a subject of many facets. He has examined not only the biological background of the quarantine problem, its social and economic features, its legal and administrative aspects, but he has also dealt with the history of federal plant quarantines and current quarantine problems. He presents as well an appraisal of future trends. There is an extensive list of references. Two errors were found: Quarantine 39 should be 59 (on p. 230); and phony peach disease (revoked) should be 67, not 69 which is the packing material quarantine.

The reader should find this an interesting and informative book, which may also save him much time in quickly putting his finger on the answer to his particular problems.—M. E. Phillips and A. B. Wells.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Cynipid and Itonidid galls—American species wanted; purchase or exchange for British species. Fresh or dried. D. Leatherdale, F.R.E.S., Old Woodstock, Oxford, England.

Wanted—Reprints or papers concerning insects taken in Alaska for inclusion in list of Alaskan insects. R. H. Washburn, Alaska Experiment Station, Palmer, Alaska.

Conopidae of the World wanted. Will pay 10¢ to $1.00 for pinned and labelled specimens. S. Camras, 4407 N. Milwaukee Ave., Chicago 30, Illinois.

Anisoptera—Nearctic sp. wanted for exchange, espec. Ophiog., Arigom., Aeschna, Neurocor., Somatoc., Cordulia, Dorocor., Leucor. R. D. Cuyler, Dept. of Entomology, N. C. State College, Raleigh, N. C.

Bembicini and Stizini (Hym., Sphec.) of New World wanted for revis. study. Will return upon request or at end of project. James E. Gillaspy, Dept. of Zoology, Univ. Texas, Austin 12, Texas.

Agapema galbina. Will exchange cocoons of this moth for nature books. E. Frizzell, Route 4, Box 96, San Benito, Texas.

Wanted—Data on exact location of colonies of *Epibembex* (olim *Bembix*) (Hymenoptera), any species, any part of country, for biological studies. Howard E. Evans, Dept. Entomology, Cornell Univ., Ithaca, N. Y.

Fanniinae wanted on loan (nearctic and holarctic), and information on collections. James G. Chillcott, Dept. Entom., Univ. of Kansas, Lawrence, Kan. (Loans may be charged to Dr. C. D. Michener.)

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